# Bertrand Creek Watershed Group Environmental Farm Plan: Project Summary

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## **Project Description**

The Bertrand Creek Watershed is the largest of the major tributaries entering the Lower Nooksack River and is a critical habitat for fish and wildlife. Falling primarily in the BC Agriculture Land Reserve the recent water sampling done by the BC Ministry of Environment and Climate Change Strategy has identified high levels of fecal coliforms and E. coli where its watercourses discharge into the United States.

The Food and Agriculture Institute in collaboration with the Agriculture Research and Development Corporation (ARDCorp), who runs the Group Environmental Farm Plan (EFP) program that assists farmers in reducing the environmental risks and threats associated with their operations, delivered a report to address water quality issues in the Bertrand Creek Watershed. The report included an examination of watershed management strategies, a summary of engagement activities with farmers carried out within the Bertrand Creek Watershed in February 2021, and delivered a set of recommendations for the next steps to serve as a basis for a Group EFP program.

The Bertrand Creek Watershed is within an area known as "Sehkomehkl" to the First Nations communities who inhabited the place for thousands of years, now commonly known as Bertrand Creek. Bertrand Creek spans and drains an area of over 4,000 hectares that provides habitat for a variety of mammals, birds, insects, amphibians, fish (including Coho salmon), and other species, and it serves as critical the only place in the world that provides habitat for the Salish sucker and Nooksack dace, two endangered fish species.



Cave Creek at 248 St. Invasive species reed canary grass and Himalayan blackberry (Toews, D. January 9, 2021).

#### Environmental issues of the Bertrand Creek Watershed

Fecal coliform bacteria (FCB) and E. coli	Lack of riparian buffers in most areas allow runoff from unconfined fecal sources, carrying E. coli and FCB into the Bertrand Creek Watershed and its tributaries.
Waterfowl	Waterfowl gathering in large numbers on farmlands cause damage and compaction to the top layer of soil and are a major contributor of FCB in the Bertrand Creek Watershed.
Riparian stability and vegetation	The spread of Himalayan blackberry and reed canary grass in the Bertrand Creek out-compete many of the native plant species, leaving banks susceptible to erosion, increased runoff, and flooding.
Nutrient pollutants and hypoxia	Increased nutrient loading of pollutants from fertilizers, and manure carried by stormwater runoff can lead to eutrophication and algae blooms and extreme adverse effects on aquatic wildlife.
Urbanization	Development of impervious surfaces by urbanization result in the least healthy portions of the watershed. Pollutants from human activity can reach a watercourse from kilometres away.
Agricultural expansion	Without adequate riparian buffers or fencing, runoff from improperly managed livestock, horse or field crops flows into nearby waterways contributing to chemical contamination and/or sedimentation.
Species at risk	There are species at risk within the Bertrand Creek Watershed that are found nowhere else in Canada. Sediment deposition and habitat destruction are their greatest threats.

Photographs of environmental issues in the Bertrand Creek Watershed



*0 Avenue - Invasive species and algae bloom. Photo credit: Toews, D. (January, 2021).* 



*0 Avenue - Debris clogging drainage ditch grate. Photo credit: Toews, D. (January, 2021).* 



*24th Avenue. - Invasive species in ditch and field flooding. Photo credit: Katan, H. (February, 2021).* 



*Howes Creek - Invasive plant species and illegal dumping. Photo credit: Katan, H. (February, 2021).* 





Otter Park - Inadequate riparian buffer next to livestockHowes Creek, 8th Ave. - Bank erosion of riparian<br/>area.operation.area.Photo credit: Toews, D. (January, 2021).Photo credit: Toews, D. (January, 2021).

Review of watershed management plans in British Columbia		
Alberni-Clayoquot Regional	Watershed Planning in Clayoquot Sound - Volume	
District	8: Clayoquot River Watershed Plan (2006)	
Capital Regional District, South Vancouver Island	Bowker Creek Watershed Management Plan (2003)	
District of Summerland,	District of Summerland:Watershed Master Pland	
Okanagan-Similkameen	and Source Assessment (2012)	
Greater Vancouver	Greater Vancouver Regional District Watershed	
Regional District	Management Plan (2002)	
Lower Mainland	Nelson Creek Integrated Watershed Management Plan (2012)	

### Additional Resources



The Langley Sustainable Agricultural Foundation is responsible for delivering the pilot project Ecological Services Initiative (ESI) engaging eleven local farmers to explore ways of protecting and enhancing ecosystem services and natural features on their land. Funded by the Township of Langley.



The Environmental Farm Plan Program is delivered by the Agriculture Research & Development Corporation (ARDCorp). This free program is designed to reduce their farm's impact on the environment and an increase in environmental sustainability.



**Farmland Advantage** is an R&D program that selects farmers whose land is determined to fall within high risk and high opportunity and provides an opportunity to participate in their program to conserve critical, natural lands, streams and habitats in British Columbia.



Langley Environmental Partners Society (LEPS) An environmental organization in the Fraser Valley focusing on environmental education and community outreach, including agricultural stewardship and habitat conservation and restoration. LEPS also coordinates the Bertrand Creek Enhancement Society.

## **Related Reports and Articles**

Agua Consulting Inc. [ACI] (2012). *District of Summerland:Watershed Master Pland and Source* Assessment (2012)

BC Ministry of Environmental and Climate Change Strategy. (2019). <u>Nooksack River Transboundary</u> <u>Report: August 2018 to September 2019 Data Summary</u>.

CH2M HILL. (2012). Nelson Creek Integrated Watershed Management Plan (2012).

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Environment and Natural Resources of Canada. (2020). <u>Recovery Strategy for Species at Risk Act:</u> <u>recovery strategies. Salish Sucker (Catostomus sp. cf. catostomus) in Canada, 2020 (final)</u>.

Environmental Protection Division of the Province of British Columbia. (2019). <u>Nooksack River</u> <u>Transboundary Water Quality Sampling Program June 2017-July 2018, Data Summary Report.</u>

Greater Vancouver Regional District. (2002). <u>Greater Vancouver Regional District Watershed</u> <u>Management Plan (2002)</u>.

Ministry of Agriculture of British Columbia. (2014). *Farm Practice - Stormwater Management*. Order No. 870.218-54.

South Coast Conservation Program. (2015). <u>Diversity by Design: Restoring Habitat for Species at Risk</u> on BC's South Coast, Module 3 - Stream and Riparian Communities.

Westland Resource Group. (2003). Bowker Creek Watershed Management Plan (2003).

Zbeetnoff, D.M. and R. McConnell. (2007). *Evaluation of the Economic Impacts from Waterfowl Damage*. Final Report. Identification and Quantification of Economic Losses and Compensation Options. B.C. Agriculture Council. White Rock B.C.